elobau GmbH & Co. KG
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Angle sensor 424A

The angle sensor 424A is used for measuring angles between 30° and 120°. The 424A is based on the contactless Hall measurement principle, which is extremely reliable and ensures a long service life. Due to high protection class IP67, the sensor can be used used reliably even under tough environmental conditions. Owing to their robustness, the sensors are particularly suitable for measuring the angular positions of rotating elements under extreme environmental conditions, e.g. on mobile machinery, in cranes, excavators, ships, mobile and stationary waste compactors, valve controllers, robot technology and wind turbines or in large medical devices.

Product characteristics

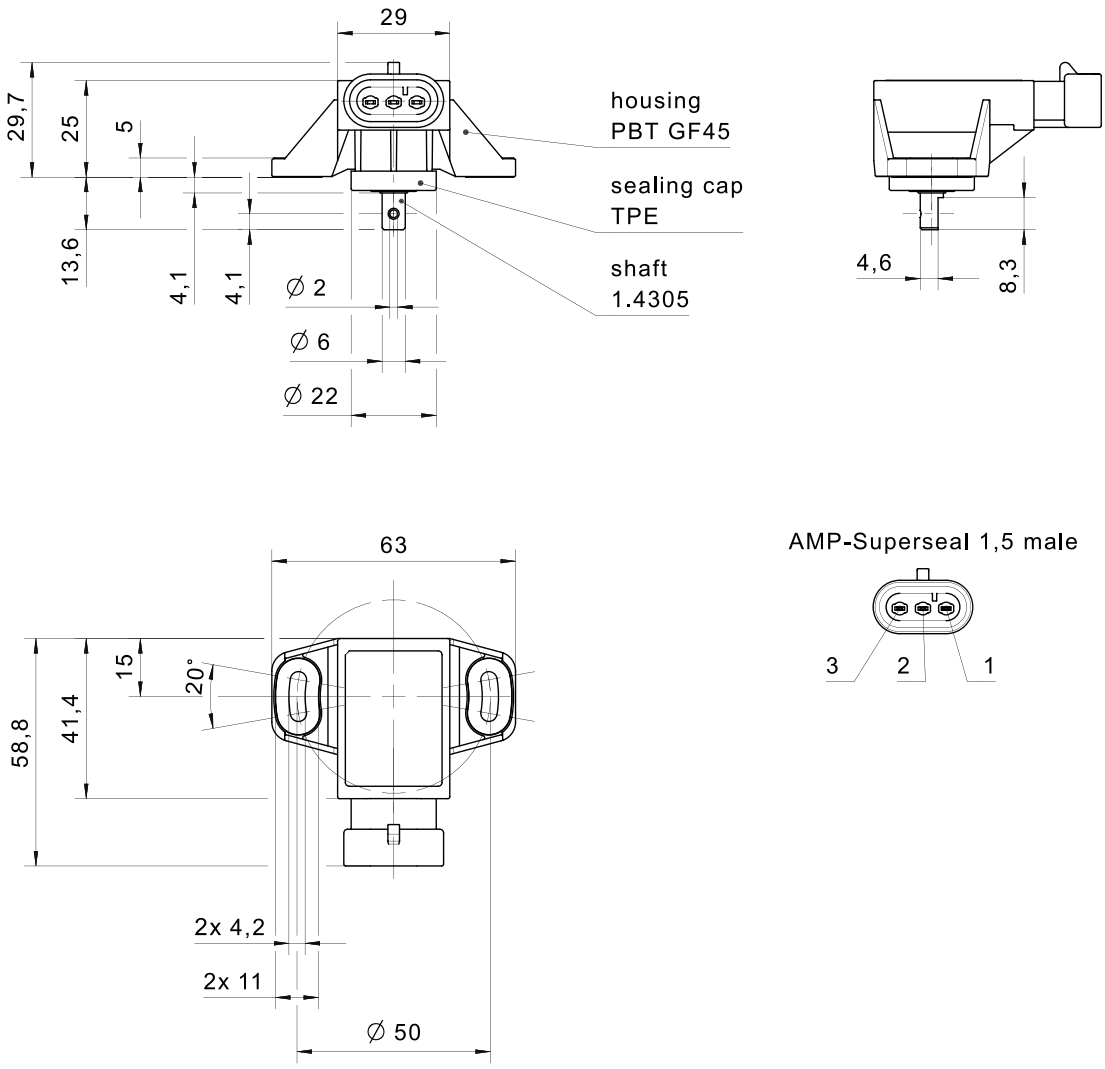
- Long lifetime and extremely reliable from contactless measurement with Hall principle
- Angle measurement range between 30° and 120°
- IP67 protection class for harsh environmental conditions
- Operating temperature range from -40 °C to +85 °C
- Resolution 0.1°
- Various current or voltage output signals
- Infinitely short-circuit proof
- Available together with actuation lever for simple connection
- EMV stabile for the motor vehicle sector, field withstand 200 V/m
- Ball bearing (optionally with plain bearing)

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Technical drawing

IMAGE 1/1



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Product options

IMAGE 1/1

ORDERING KEY

424A…					Angle sensor 120°, magnetic
					Bearing
	1				Ball bearing
					Output signal 1 / signal sequence
		1A			4…20mA / CCW
		6A			0.5...4.5V, ratiometric / CCW
		7A			0.5…4.5V / CCW
					Angle measuring range
			030		30°
			045		45°
			060		60°
			090		90°
			120		120°
					Operating lever
				B	Yes
				-	No (if selected without lever, this position is omitted)

Optional
Output signal 1
1…5V
Other output signals, signal sequences and angle rates on request

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Article characteristics

Attribute	424A.1A...	424A.6A...	424A.7A...
Polarity reversal protection	yes		
Output signal min.	-	0.5 V DC	
Output signal max.	-	4.5 V DC	
Output signal min.	4 mA	-	
Output signal max.	20 mA	-	
Output signal - centre position/zero position	-	2.5 V DC	
Output signal - centre position/zero position	12 mA	-	
Resolution	0.1 °		
Operating voltage min.	10 V DC	4.5 V DC	10 V DC
Operating voltage max.	30 V DC	5.5 V DC	30 V DC
Current consumption	18 mA	8 mA	10 mA
Load resistance min.	-	20000 Ohm	
Load resistance max.	250 Ohm	-	
Short-circuit resistance to GND	yes		
Short-circuit resistance to supply	yes		no
Temperature coefficient	typ. ±250 ppm/K		
Signal sequence	Standard CCW (optional CW)		
Signal update rate	2000 Hz		
Outputs (quantity, type)	1		
Technology	Hall		
Angle measuring range	30°...120 °		
Outputs	4...20mA	0,5...4,5V ratiometric	0,5...4,5V
MTTF	101 a	225.7 a	133 a
Typical linearity error	= ±15° : ±0,2° = ±25° : ±0,4° = ±35° : ±1,0° = ±45° : ±2,0° = ±60° : ±5,0°		
EMC Agricultural and forestry machines (Norm)	EN ISO 14982 pulse 5b: max. voltage 35V (absolute), functional status C for pulse 1 and 4	EN ISO 14982 conducted disturbance not applicable for 5V supply	EN ISO 14982 pulse 5b: max. voltage 35V (absolute), functional status C for pulse 1 and 4
EMC Earth-moving and building construction machinery (Norm)	DIN EN ISO 13766-1 pulse "load dump": max. voltage 35V (absolute)	DIN EN ISO 13766-1 conducted disturbance not applicable for 5V supply	DIN EN ISO 13766-1 pulse "load dump": max. voltage 35V (absolute)

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Attribute	424A.1A...	424A.6A...	424A.7A...
EMC Industrial trucks (Norm)	DIN EN 12895		
Max. shaft load, axial	50 N		
Max. shaft load, radial	100 N		
Bearing	Ball bearing		
Mechanical stop	Optional		
Actuating lever	Selectable		
Protection class	IP67 DIN EN 60529		
Operating temperature min.	-40 °C		
Max. operating temperature	85 °C		
Min. storage temperature	-40 °C		
Max. storage temperature	85 °C		
Torque for fastening screws	2.5 N m		
Connector type	AMP Superseal 1.5		